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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,169	01/30/2004	Louis J. Spadaccini	67,097-024; EH-11034	7800
26096	7590	02/16/2006		
CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009				
			EXAMINER HOPKINS, ROBERT A	
			ART UNIT 1724	PAPER NUMBER

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/769,169

Applicant(s)

SPADACCINI ET AL.

Examiner

Robert A. Hopkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1-30-04</u> . | 6) <input type="checkbox"/> Other: ____.  |

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**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 6 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Kidd et al(6770202).

Kidd et al teaches a method of preventing a liquid from migrating into a microporous polymer membrane comprising the steps of heating a microporous polymer membrane (TEFLON AF 2400) to a predetermined temperature for a predetermined time (column 5 lines 22-23) to reduce the size of the micropores in the microporous polymer membrane from a first size to a second size, the second size (about 0.1 micron to 10 micron) being large enough to allow migration of a gas through the membrane and small enough to prevent migration of a liquid through the membrane (column 6 lines 45-52), and disposing the microporous polymer membrane in a fluid separating device (column 6 lines 18-25).

Claim 15 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Kidd et al (6770202).

Kidd et al teaches a microporous polymer membrane comprising micropores that have been reduced in size from a first size to a second size by a heat treatment, the second size being large enough to generally allow migration of a gas through the microporous polymer membrane and small enough to generally prevent migration of a liquid into the microporous polymer membrane (column 6 lines 45-52).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spadaccini et al(6709492) taken together with Kidd et al(6770202).

Spadaccini et al teaches a fuel system comprising a fuel storage tank(22), a downstream use for fuel(14), a fluid connection for communicating fuel from the fuel storage tank to the downstream use, and a fuel deoxygenator mounted in the fluid connection, the fuel deoxygenator having a microporous polymer membrane disposed therein the defines a fuel passage within the fuel deoxygenator device for flow of fuel therethrough. Spadaccini et al is silent as to wherein the microporous polymer membrane is comprised of micropores that have been reduced in size from a first size to a second size by heat treatment, the second size being large enough to generally allow migration of a gas through the microporous polymer membrane and small enough to generally prevent migration of fuel in to the microporous polymer membrane. Kidd et al teaches a microporous polymer membrane having reduced size micropores for separation of a gas from a liquid. It would have been obvious to someone of ordinary skill in the art the time of the invention to provide a microporous polymer membrane having reduced size micropores for the microporous polymer membrane of Spadaccini et al to provide for gas flowthrough wherein the membrane material is resistant to penetration by liquid(column 6 lines 50-52; column 5 lines 22-23 noting a thermal process for changing the temperature of a pre-membrane).

Spadaccini et al further teaches wherein the microporous polymer membrane is supported by a substrate.

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Spadaccini et al taken together with Kidd et al is silent as to wherein the heat treatment comprises heating the microporous polymer membrane at a temperature above 100C, and a temperature between about 130C and 150C for about two hours. Examiner notes Kidd et al teaches a membrane pore size of about 0.1 micron to 10 micron, which is close to the 12 micron average diameter recited in the current specification, therefore because Kidd et al and the current specification recite use of the same amorphous fluoropolymer (TEFLON AF 2400), it would have been obvious to someone of ordinary skill in the art at the time of the invention to provide for changing the temperature of the pre-membrane at a temperature range recited in claims 3 and 4 in order to obtain a membrane having an average pore size of about 0.1 micron to 10 micron.

Claims 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kidd et al (6770202).

Kidd et al teaches all of the limitations of claims 7-12 but is silent as to wherein the heat treatment comprises heating the microporous polymer membrane at a temperature above 100C, and a temperature between about 130C and 150C for about two hours. Examiner notes Kidd et al teaches a membrane pore size of about 0.1 micron to 10 micron, which is close to the 12 micron average diameter recited in the current specification, therefore because Kidd et al and the current specification recite use of the same amorphous fluoropolymer (TEFLON AF 2400), it would have been obvious to someone of ordinary skill in the art at the time of the invention to provide for changing the temperature of the pre-membrane at a temperature range recited in claims

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7-12 in order to obtain a membrane having an average pore size of about 0.1 micron to 10 micron.

Kidd et al teaches all of the limitations of claims 13 and 14 but is silent as to wherein the fluid separating device is a fuel deoxygenator in a fuel system, and wherein the fluid separating device is in an aircraft. Examiner respectfully submits that fuel deoxygenators are well known, and since Kidd et al teaches providing an amorphous fluoropolymer membrane for use as a gas filter, it would have been obvious to someone of ordinary skill in the art at the time of the invention to dispose the microporous polymer membrane with thermally reduced micropores as taught by Kidd et al into a fuel deoxygenator in a fuel system and into an aircraft in order to prevent liquid fuel from passing through the membrane during a fuel deoxygenation process.

Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kidd et al(6770202).

Kidd et al teaches all of the limitations of claims 16-21 but is silent as to wherein the heat treatment comprises heating the microporous polymer membrane at a temperature above 100C, and a temperature between about 130C and 150C for about two hours. Examiner notes Kidd et al teaches a membrane pore size of about 0.1 micron to 10 micron, which is close to the 12 micron average diameter recited in the current specification, therefore because Kidd et al and the current specification recite use of the same amorphous fluoropolymer(TEFLON AF 2400), it would have been obvious to someone of ordinary skill in the art at the time of the invention to provide for changing the temperature of the pre-membrane at a temperature range recited in claims

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7-12 in order to obtain a membrane having an average pore size of about 0.1 micron to 10 micron.

Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spadaccini et al(6709492) taken together with Kidd et al(6770202).

Spadaccini et al teaches a fuel deoxygenator device comprising a fuel side and a non-fuel side separated by a microporous polymer membrane for removing gas from fuel flowing in contact with the microporous polymer membrane on the fuel side, and the microporous polymer membrane comprising micropores. Spadaccini et al is silent as to wherein the microporous polymer membrane is comprised of micropores that have been reduced in size from a first size to a second size by heat treatment, the second size being large enough to generally allow migration of a gas through the microporous polymer membrane and small enough to generally prevent migration of fuel in to the microporous polymer membrane. Kidd et al teaches a microporous polymer membrane having reduced size micropores for separation of a gas from a liquid. It would have been obvious to someone of ordinary skill in the art the time of the invention to provide a microporous polymer membrane having reduced size micropores for the microporous polymer membrane of Spadaccini et al to provide for gas flowthrough wherein the membrane material is resistant to penetration by liquid(column 6 lines 50-52; column 5 lines 22-23 noting a thermal process for changing the temperature of a pre-membrane).




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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RAH  
February 14, 2006

  
ROBERT A. HOPKINS  
PRIMARY EXAMINER  
